

LEAD AND COPPER RULE SAMPLING GUIDANCE

For systems serving less than 50,000 people

This guidance document was developed to help water systems serving less than 50,000 people comply with the California Lead and Copper Rule. The Lead and Copper Rule requires community and nontransient-noncommunity water systems to monitor lead and copper levels at the consumers' taps. If action levels are exceeded, installation of corrosion control treatment is required. If the action level for lead is exceeded, public notification is required.

Lead Action Level = 0.015 mg/L

Copper Action Level = 1.3 mg/L

Compliance with the lead and copper action levels is based on the 90th percentile lead and copper levels. This means that the concentration of lead and copper must be less than or equal to the action level in at least 90% of the samples collected.

To help explain how to comply with the California Lead and Copper Rule, information on the following topics is included in this document:

- Section 1 - Number of Tap Sample Sites Required
- Section 2 - When to Sample
- Section 3 - Where to Sample
- Section 4 - How to Sample
- Section 5 - How to Calculate the 90th Percentile Lead and Copper Levels
- Section 6 - What to Do if You Exceed the Lead or Copper Action Level
- Section 7 - How to Report Your Sample Results

Attachment to this document:

"Homeowner Tap Sample Collection Procedures"

Section 1. Number of Tap Sample Sites Required

The number of tap sample sites required is shown in Table 1 and is based on the population served by your water system and also whether you are performing Standard or Reduced Monitoring.

Table 1. Minimum Number of Tap Sample Sites Required

System Population	Minimum Number of Tap Sample Sites	
	Standard Monitoring	Reduced Monitoring
10,001 to 100,000	60	30
3,301 to 10,000	40	20
501 to 3,300	20	10
101 to 500	10	5
Less than 101	5	5

Section 2. When to Sample

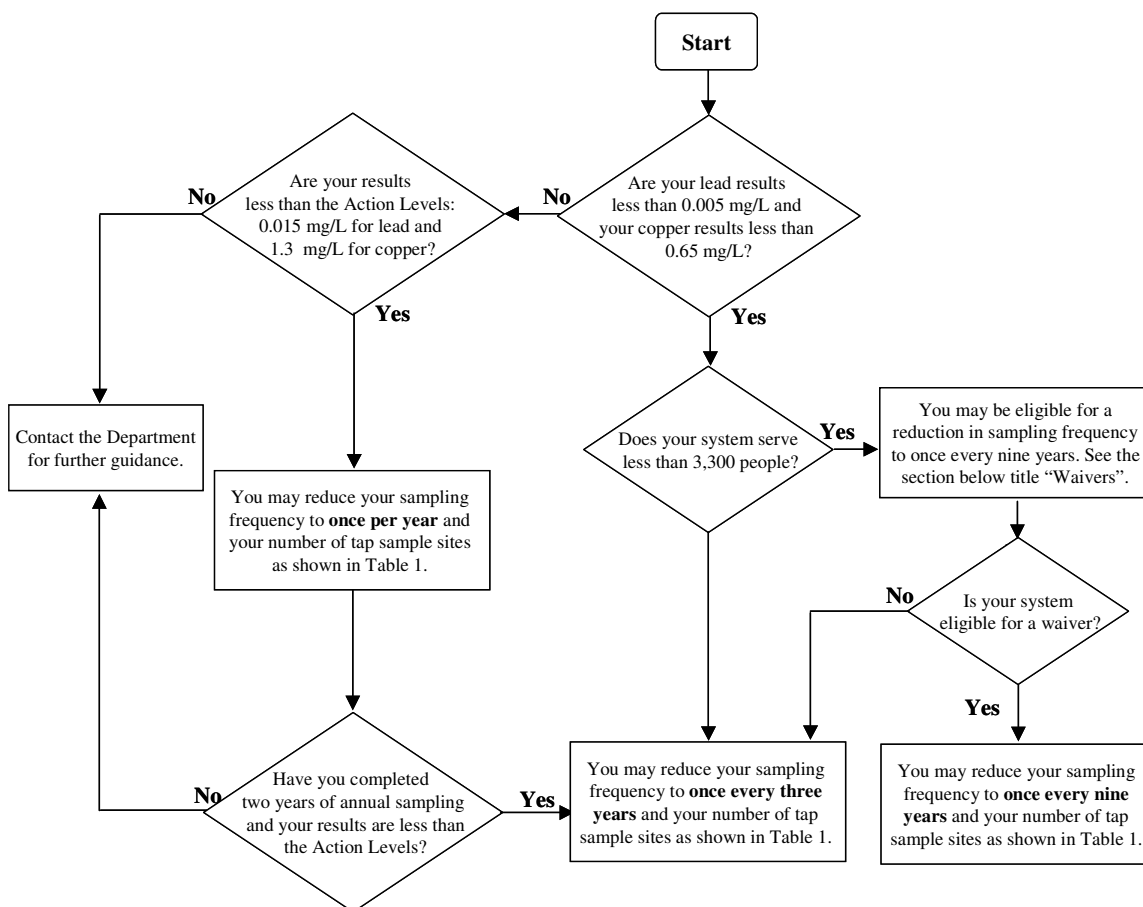
- Standard Monitoring:

Each water system must complete at least two consecutive 6-month Standard Monitoring periods not exceeding the lead or copper action level before the frequency of sampling can be reduced. During each 6-month Standard Monitoring period, you must collect at least one tap sample from the number of sites shown in Table 1 under Standard Monitoring. Therefore, during your first year of sampling, collect a set of samples in the first six months and a set of samples in the second six months. Samples must be analyzed for both lead and copper.

If, at any time, your 90th percentile lead or copper level exceeds the action level, you must contact this office for further guidance.

- Reduced Monitoring:

If you have completed at least two consecutive 6-month Standard Monitoring periods, use the flowchart below to determine whether you are eligible for reduced monitoring. All samples for reduced monitoring must be collected during June, July, August or September.



- **Waivers:**

If your system serves less than 3,300 people and you have completed at least one consecutive 6-month Standard Monitoring period, you may be eligible for a monitoring waiver. You must obtain written notification from the Department before reducing your sampling to once every nine years.

Lead monitoring waiver:

Your system is eligible to reduce your lead sampling to once every nine years, if the 90th percentile of your lead sample results is less than 0.005 mg/L and your system does not contain any of the following:

- Plastic pipes and service lines that contain lead plasticizers; and
- Lead service lines, lead pipes, lead soldered pipe joints, and leaded brass or bronze alloy fittings and fixtures, unless you can demonstrate that such fittings and fixtures do not leach lead into the drinking water.

Copper monitoring waiver:

Your system is eligible to reduce your copper sampling to once every nine years, if the 90th percentile of your copper sample results is less than 0.65 mg/L and your system does not contain any copper pipes and service lines.

Section 3. Where to Sample

- Notes:
1. If lead service lines are present in the distribution system, at least half of the samples must come from the sites served by lead service lines.
 2. Do not sample from homes or buildings, which have point-of-use treatment (e.g. water softener, carbon filter system, etc.).
 3. Each round of sampling should be conducted at the same sampling sites. If an original sampling site is not available, you should collect a tap sample from another site meeting the same Tier criteria as the original site.

- **Community Water Systems:**

Lead and copper tap samples must be collected from sampling locations which meet the following criteria:

Tier 1 - Single-family structures that contain:

- a) Lead pipes; or
- b) Copper pipes with lead solder installed after 1982; or
- c) Pipes served by lead service lines.

If there are not enough Tier 1 sites available, samples must meet the following criteria:

Tier 2 - Buildings and multiple-family residences that contain:

- a) Lead pipes; or
- b) Copper pipes with lead solder installed after 1982; or
- c) Pipes served by lead service lines.

If there are not enough Tier 2 sites available, samples must meet the following criteria:

Tier 3 - Single Family structures that contain copper pipes with lead solder installed before 1983.

A system with an insufficient number of tier 1, 2 and 3 sites shall complete its sampling pool with representative sites (i.e., plumbing materials commonly found at other sites) throughout the distribution system.

- **Non-transient/Non-community Water Systems:**

Lead and copper tap samples must be collected from sampling locations which meet the following criteria:

Tier 1 - Buildings that contain:

- a) Lead pipes; or
- b) Copper pipes with lead solder installed after 1982; or
- c) Pipes served by lead service lines.

If there are not enough Tier 1 sites available, samples must meet the following criteria:

Tier 2 - Buildings that contain copper pipes with lead solder installed before 1983.

If additional sites are needed to complete the sampling pool, the system shall use representative sites (i.e., plumbing materials commonly found at other sites) throughout the distribution system.

Section 4. How to Sample

Depending on the type of water system you operate, the following options are available for sample collection:

- a) You can collect the samples yourself using the procedures outlined below, or
- b) Residents of the water system can collect the samples for you. Letters are usually sent to find volunteers to participate in the sampling program. The attached sample collection instruction sheet must be sent to each participant. Residents collect the samples and complete the bottom portion of the instruction sheet. Sample bottles and the completed instruction sheet are then collected by you. Sample bottles are then transported to the laboratory for analysis.

Sample Procedures:

- 1) Samples are to be taken from a kitchen or bathroom cold water faucet. Do not sample from faucets have point-of-use treatment (e.g. water softener, carbon filter system, etc.). Sampling from faucets containing copper/brass parts is discouraged. If copper/brass-containing faucets cannot be avoided, please make sure they are not new faucets.
- 2) Each sample must be collected after the water has stood undisturbed in the pipes for a minimum of 6 hours, but not more than twelve. It is best to collect the sample first thing in the morning.
- 3) Each sample must be one liter in volume and must contain the first water drawn from the faucet.
- 4) Remove the cap from the one-liter sample bottle, place the container directly below the faucet and gently open the cold water tap. Fill the sample bottle to the line marked "1 liter or 1000-ml" and turn off the water.

Tightly cap the sample bottle and complete the required information on the sample bottle label.

- 5) All samples must be analyzed by a laboratory certified by the State to perform drinking water lead and copper analyses.

Section 5. How to Calculate the 90th Percentile Lead and Copper Levels

- 1) List all lead and copper sample results in the table provided on the attached "Lead and Copper Results Worksheet".
- 2) Circle the highest three values for both lead and copper.
- 3) Determine the 90th percentile lead level by following the instructions given in Table 2. Compare this value to the lead action level. If your 90th percentile lead level is greater than 0.015 mg/l, you have exceeded the action level.
- 4) Determine the 90th percentile copper level by following the instructions given in Table 2. Compare this value to the copper action level. If your 90th percentile copper level is greater than 1.3 mg/l, you have exceeded the action level.

Table 2 - How to Determine the 90th Percentile Lead or Copper Level

Number of Tap Samples Collected	How to Determine the 90th Percentile Lead or Copper Level
5 to 7	Average the two highest sample results to get the 90th percentile level.
8 to 12	The 90th percentile level is the second highest sample result.
13 to 17	Average the second and third highest sample results to get the 90th percentile level.
18 to 22	The 90th percentile level is the third highest sample result.

Section 6. What to Do if You Exceed the Lead or Copper Action Level

If your 90th percentile lead or copper level exceeds the action level, you must contact this office for further guidance.

Section 7. How to Report Your Sample Results

Upon completion of each sampling period, the following items must be submitted to State Water Resources Control Board – Division of Drinking Water Field Office:

- 1) Ask the laboratory to submit the results to the state database through "Lab-To-State" portal.
- 2) Completed "Lead and Copper Results Worksheet".
- 3) Laboratory copies of all sample results.

All water systems must provide a notice of the individual tap results from lead tap water monitoring to the persons served at the specific sampling site from which the sample was taken (e.g., the occupants of the residence where the tap water was tested).

Homeowner Tap Sample Collection Procedures

These samples are being collected to determine the lead and copper levels in your tap water. This sampling effort is required by the U.S. Environmental Protection Agency and your state, and is being accomplished through the cooperation of homeowners and residents.

Tap Sample Collection Procedures:

- 1) Prior arrangements will be made to coordinate the sample collection event. Dates will be set for sample bottle delivery and pick-up by water system staff.
- 2) Contact your water system if you have a whole-house (point of entry) carbon filter, water softener, reverse osmosis treatment device, or a hot water recirculating system.
- 3) Samples are to be taken from a kitchen or bathroom cold water faucet. Do not sample from faucets have point-of-use treatment (e.g. water softener, carbon filter system, etc.). Sampling from faucets containing copper/brass parts is discouraged. If copper/brass-containing faucets cannot be avoided, please make sure they are not new faucets.
- 4) Each sample must be collected after the water has stood undisturbed in the pipes for a minimum of 6 hours, but not more than twelve hours. Due to this requirement, either early mornings or evenings upon returning home are the best sampling times.
- 5) Each sample must be one liter in volume and must contain the first water drawn from the faucet.
- 6) Remove the cap from the one-liter sample bottle, place the container directly below the faucet and gently open the cold water tap. Fill the sample bottle to the line marked "1 liter or 1000-ml" and turn off the water.

Tightly cap the sample bottle and complete the required information on the sample bottle label. If the label has been partially completed for you, verify that the information is correct.
- 7) If any plumbing repairs or replacement has been done in the home since the previous sampling event, note this information below.
- 8) Complete the bottom portion of this instruction sheet.
- 9) Place the sample bottle and instruction sheet outside of the residence (in the same location as delivery) for retrieval by water system staff.
- 10) Results of the sampling will be provided to the participants.

If you have any questions regarding these directions, call:

Contact Name

Water System Name

Phone Number

To Be Completed By Resident

Sample collection address: _____

Water was last used: Time _____ Date _____

Sample was collected: Time _____ Date _____

Plumbing repairs or replacement since last sampling event? _____

I have read the above directions and have taken a sample in accordance with these directions.

Signature

Date